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NOTES ON CLIMATOLOGY.

BY

ROBERT DEC. WARD.

TROPICAL COLONIZATION.—The governments of tropical colonies and the problems connected with labor in those colonies are to a large extent affected by climatic controls. The difficulty, if not the impossibility, of the acclimatization of the white man in most tropical lands operates to keep down the number of Europeans who take up their residence there, and the kind of government must inevitably be organized to suit the conditions of population there met with. The usual state of things is, and has to be, that there is a relatively small number of whites, who are superior by reason of higher intellectual capacity, greater energy and good education, but who cannot do hard physical labor out of doors, and, on the other hand, a large proportion of natives, who are more or less ignorant and lazy, and have less capacity for government than the white man in their midst. That one of the chief controls, if not the chief control, in this whole matter is climatic, is clear. Further, it has been proved over and over again that where Nature has provided abundantly for man, as she has in most parts of the tropics, and where he does not have to work hard to get for himself food, clothing and shelter, there it is extremely difficult to make men work. Hence there arises a labor problem, which has to be solved by compulsory labor of the natives themselves, or by the importation of foreign workmen under a contract. Again the control of climate is plain.

In view of the foregoing facts, it is certainly very striking that a recent book dealing with tropical colonization, the government of tropical possessions, and the labor problem in these countries, lays no distinct emphasis upon the underlying control which climate exercises in these matters. In fact, *climate* and *acclimatization* do not find a place in the very complete index, and there are only three brief references to the physiological effects which a moist tropical climate has upon man in making him disinclined to do hard and continuous labor. The book to which we have reference is Mr. Alleyne Ireland's *Tropical Colonization* (Macmillan, 1899), an excellent presentation of many of the important aspects of the subject in hand, and which will prove valuable reading at

the present time. The student of the human side of climatology will find much to interest him in Mr. Ireland's chapters on the forms of government in tropical colonies; the earlier aspects of the labor problem in the tropics; the indentured labor system in the British colonies, and the solution of the labor problem by the Dutch in Java. The climatic control is behind many of the problems which other countries have had to face, and are now facing, in dealing with tropical possessions. We should not lose sight of the fact that this climatic control is also very potent in the problems we shall soon be called upon to face in connection with our new tropical possessions.

CLIMATE OF MARYLAND.—A valuable report upon the physiography and climate of Maryland comes to us as Vol. I of the Maryland Weather Service. This volume is by far the most elaborate which has yet been issued by any State Weather Service, and is a most encouraging sign of the advance which climatology is making in this country. The publication of page after page of tabulated meteorological observations, without any discussion at all, or with only a very brief summary, is gradually being replaced by the careful study of these records and the discussion of them, with the object of presenting a living picture of the climatic conditions of the region in question. In 1894, in the *First Biennial Report of the Maryland Weather Service*, there appeared an excellent account of the climatology and physical features of Maryland. There were brief reports upon the topography, geology and soils of the State, and a short account of the chief characteristics of the climate. A series of colored charts showing seasonal and annual isotherms and precipitation accompanied the report. The present volume covers a similar but much larger field, and is very much more complete. It is an octavo book of 566 pages, with 54 plates and 61 figures. The report of 1894 numbered but 140 pages.

A General Report on the Physiography of Maryland, by Dr. Cleveland Abbe, Jr., forms a fitting first paper, after the introduction by Prof. W. B. Clark, the Director of the Maryland Weather Service. Dr. Abbe gives a detailed account of the physical features of the State, and, by means of excellent heliotype views, geological maps and cross-sections, makes it possible for the reader to gain a very clear idea of the topographical peculiarities of Maryland, a knowledge of which is necessary if the climate is to be intelligently studied. Papers by Prof. Cleveland Abbe, on the *Aims and Methods of Meteorological Work, especially as conducted by National and State*

Weather Services, and by Dr. Oliver L. Fassig, *A Sketch of the Progress of Meteorology in Maryland and Delaware*, precede the *Outline of the Present Knowledge of the Meteorology and Climatology of Maryland*, by Mr. F. J. Walz. The last of these three papers, namely that by Mr. Walz, is an excellent presentation of the climatology of Maryland brought down to date. The control of the weather of Maryland by high and low pressure areas; a classification of the characteristic weather types; the influence of the surface configuration of Maryland upon the climate, and a full discussion of the important climatic features, are included in this report. Colored charts showing the monthly, seasonal and annual temperature and rainfall distribution complete the volume, which is certainly a credit to all concerned in its compilation, and may well be taken as a standard by other State Weather Services.

THE CHINESE EASTERN RAILWAY.—Reference has already been made in these NOTES to the difficulties which her severe winters put in the way of Russia, by freezing up her chief ports and thus checking her commerce by sea during a part of the year. In the effort to overcome this handicap Russia has resorted to the ice-breaker, and by this means has been able to do much towards keeping herself in communication with the outside world during the winter months. A harbor which naturally freezes over every year, and which has to be kept open by artificial means, is not as good a terminus for a great trans-continental railway as a harbor which does not freeze. Vladivostock, in short, is not as desirable a terminus for the Trans-Siberian road as Port Arthur. Russia was not slow in coming to this conclusion. The original plan, by which the Trans-Siberian railroad is to be built to Vladivostock, has not been changed, but a very important modification of that plan has been brought about. The present plan, which is being pushed to completion with all possible speed, is to run the eastern section of the Trans-Siberian road from Kidalova down through the Chinese province of Manchuria to a terminus at Port Arthur. In 1896, Russia made a contract with China to build a railroad through Manchuria, guaranteeing that the president of the road should be a Chinaman, and that, after eighty years, the ownership should pass to the Chinese Government upon suitable payment. In 1898, Russia secured a lease of Port Arthur and of the whole Liao-tung peninsula, and now has a port which is to be the terminus of the shortened Trans-Siberian railroad, and which is free from ice throughout the year. Thus has ice-bound Vladivostock been superseded by ice-free Port Arthur.

KÖPPEN'S MARINE METEOROLOGY.—There has for some time been need of an elementary presentation of the subject of marine meteorology. Sailing directions, books on navigation, and meteorological charts showing the winds and weather for the different oceans, are all well enough for seamen, but for the general student, who wishes to gain some understanding of the meteorology of the oceans, they are not of much direct benefit. Dr. Köppen, of the Deutsche Seewarte in Hamburg, has written a valuable little book (*Grundlinien der maritimen Meteorologie*; Hamburg, 1899), which is sure to find many interested readers. There is no attempt in it to cover the whole ground in all its details, but only to take up the fundamental principles of the subject. While intended especially for seamen, and designed for use by them in preparation for the study of the more advanced and more technical *Segelhandbücher* of the German Naval Observatory, Köppen's *Grundlinien* will prove very useful to landsmen as well. Chapter V, dealing with the control of sailing routes by the winds; and with fogs, calms and storms, is, perhaps, the most generally interesting in the book. One chapter, of 12 pages, is devoted to an excellent presentation of the climates of the world. This book is a distinct addition to the books on meteorology already on the shelves, for it takes up a side of the science which has not yet been presented in a small compass, and in an elementary, but scientific way.